

WHAT IS CLAIMED IS

5 1. A smart card connector that has a base with front and rear portions and laterally-spaced opposite sides, the base having a base frame and a plurality of contacts mounted on the base frame, and the connector has a cover with a rear portion pivotally connected to the base about a laterally-extending axis to allow the cover to pivot between closed and open positions, the cover having a cover frame with laterally opposite sides and the cover having a card-holding region for holding a smart card, wherein:

10 said base has a pair of largely downwardly-facing base shoulders at laterally opposite sides of the base;

15 said cover has a locking member with laterally opposite side portions that form lock parts, said locking member being moveable on the cover frame between locked and unlocked positions to move each of said side portions along a path, wherein when the cover is closed and said locking member is in said locked position said lock parts of said locking member lie under said base shoulders to lock the cover closed, and in said unlocked position said lock parts of said locking member do not lie under said shoulders; and including

20 switch means lying in the path of at least one of said side portions of said locking member, for detecting the position of the locking member.

2. The smart card connector described in claim 1 wherein:

25 said locking member is formed of electrically conductive material;

30 said switch means includes a pair of switch blades at opposite sides of said base, each switch blade each having an active part that is positioned to be deflected by one of said side portions as the lock parts slide under the base shoulders.

3. The smart card connector described in claim 2 wherein:
said switch blade active parts each lies adjacent to the path of one of
said locking member side portions and is positioned to be vertically deflected by
the corresponding side portion.

4. The smart card connector described in claim 2 wherein:
said switch blade active parts each lies beside the path of one of said
locking member side portions to be laterally deflected by the corresponding
side portion.

5. The smart card connector described in claim 1 wherein:
said locking member is formed of electrically conductive material;
said switch means includes a pair of sheet metal switch blades at
opposite side of said base, each switch blade having a switch blade tab lying
under the base shoulder, so each lock part moves between a base shoulder
and a switch blade tab when the locking member moves to the locked position.

6. The smart card connector described in claim 5 including:
a circuit board with upper and lower board faces, said base being
mounted on said circuit board upper face;
said switch blade tabs lie above said board upper face at least when
said locking member is in said unlocked position, so said switch blade tabs can
be downwardly deflected as said locking member moves to said locked
position.

7. The smart card connector described in claim 1 wherein:
said locking member is electrically conductive and is slideable in forward

and rearward directions;

5 said switch means includes a pair of sheet metal switch blades lying at opposite sides of said base;

10 each of said switch blades is elongated and has a rear part fixed to the base rear portion, a middle part, and a front part, the middle parts of the switch blades being spaced laterally inward of the corresponding locking member side portions to avoid contact therewith, and the front parts of the switch blades extend laterally outward of said said middle parts to engage said side portions when the side portions slide forward.

8. The smart card connector described in claim 1 including:

5 a circuit board, said switch means includes a plurality of conductive switching traces on said circuit board including at least a first switching trace lying at at least a first of said base sides;

5 a first of said locking member side portions has a resilient tab that engages and disengages one of said switching traces as said locking member moves between said locked and unlocked positions.

9. The smart card connector described in claim 8 wherein:

5 said circuit board has a second switching trace at said first base side;

5 said first and second switching traces are positioned one forward of the other so first side portion breaks engagement with said first switching trace and engages said second switching trace as the locking member moves between said locked and unlocked positions.

10. The smart card connector described in claim 1 including:
a circuit board, said switch means includes first and second switching
traces at opposite sides of said base;
said locking member side portions each has a resilient tab for engaging
5 said switching traces, with at least one of said resilient tabs engaging and
disengaging a corresponding one of said switching traces as said locking
member moves between said locked and unlocked positions.

11. A smart card connector which includes a base with opposite
sides, the base having an insulative base frame with an upper surface, and the
base having a plurality of contacts mounted on the base frame and having pad-
engaging contact parts projecting above the base frame upper surface, the
5 connector having a cover which holds a smart card that has a lower face with
contact pads, the cover having opposite sides and being pivotally connected to
the base to pivot from an open portion wherein the card is spaced from the
base to a closed position wherein the card contact pads move against said pad-
engaging parts of said contacts, wherein:

10 the cover has a cover frame with opposite sides, and the cover has an
electrically conductive locking member with side portions at said cover frame
opposite sides, said locking member being slideable on the frame between
locked and unlocked positions;

15 the base frame has largely downwardly-facing base shoulders at
opposite sides of the base, and the side portions of the locking member have
lock parts that slide to a position under the base shoulders when the locking
member moves to said locked position; and including

a pair of resilient switch blades located at opposite sides of the base and
positioned to engage the side portions of the locking member when the cover is

20 pivoted to its closed position and the locking member is slid between said unlocked and locked positions.

12. The smart card connector described in claim 11 wherein:
said base and cover each have front and rear ends, and said pivotal connection of said cover to said base lies at the rear ends of both of them;
said cover frame has a top wall that lies over a portion of a card that lies in the cover but not over another portion of the card and said locking member comprises a piece of sheet metal that has a plate-like portion that lies over a portion of the card that is not covered by the cover frame.

5 13. The smart card connector described in claim 11 wherein:
said switch blades have tabs that are positioned to be vertically deflected by said side portions of said locking member.

14. The smart card connector described in claim 11 wherein:
said switch blades have tabs that are positioned to be horizontally deflected by said side portions of said locking member.

5 15. A smart card connector which includes a base with opposite sides that is mounted on a circuit board, the base having an insulative base frame with an upper surface, and the base having a plurality of contacts mounted on the base frame and having pad-engaging contact parts projecting above the base frame upper surface, the connector having a cover which holds a smart card that has a lower face with contact pads, the cover having opposite sides and being pivotally connected to the base to pivot from an open portion wherein the card is spaced from the base to a closed position wherein the card contact

pads move against said pad-engaging parts of said contacts, wherein:

the cover has a cover frame with opposite sides, and the cover has a locking member with side portions at said cover frame opposite sides, said locking member being slideable on the frame between locked and unlocked positions;

the base frame has largely downwardly-facing base shoulders at opposite sides of the base frame, and the side portions of the locking member have lock parts that slide to a position under the base shoulders when the locking member moves to said locked position;

10 said circuit board has a plurality of conductive switching traces and said cover has a plurality of resilient tabs that slide over and against said switching traces with at least one of said tabs making and breaking engagement with one of said switching tabs as said locking member move between said locked and unlocked positions.

16. The connector and circuit board described in claim 15 wherein:

5 said locking member is formed of electrically conductive material, said plurality of switching traces include first and second switch traces that lie at said opposite sides of said base, and each of said locking member side portions includes a tab that is biased against said circuit board to engage one of said traces in at least one position of said locking member.

17. A smart card connector that includes a base with contacts and a cover that holds a smart card, the base having opposite sides with largely downwardly facing base shoulders and the cover having a locking member that can be moved from an unlocked to a locked position wherein opposite 5 side portions of the locking member move under the base shoulders, the

improvement comprising:

10 conductive switching elements located at opposite sides of the base;
said side portions of said locking members are each positioned to
engage one of said switching elements in at least one of said positions of
said locking member.

18. The connector described in claim 17 wherein:

5 at least one of said switching elements is a sheet metal member that
is mounted on said base and that has a tab that is resiliently deflected and
thereby firmly engaged with one of said locking member side portions in at
least one of said locking member positions.

19. The connector described in claim 17 including a circuit board,
said base being mounted on said circuit board, wherein:

at least one of said switching elements is a conductive trace on said
circuit board.